

# Taxonomy & Morphology of Gypseous Soils

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# Terms in Lieu of Texture

(Used to describe horizon texture in pedon descriptions)

- For materials with  $\geq 40\%$  by wt. gypsum.
- Gypsum dominates phys/chem properties.
  - Traditional particle-size class not meaningful.
- Two Classes
  - Coarse gypsum material
    - $\geq 50\%$  particles 0.1 to 2.0 mm
  - Fine gypsum material
    - $< 50\%$  particles 0.1 to 2.0 mm

# Substitutes for Particle-size Class

(Used in family classification)

- For materials with  $\geq 40\%$  by wt. gypsum.
  - Somewhat like in Andisols, regular particle-size classes and rules of application do not work well for high gypsum soils.
  - 3 classes:
    - Gypseous-skeletal
    - Coarse-gypseous
    - Fine-gypseous

# Substitutes for Particle-size Class

(Used in family classification)

- 6 Contrasting Particle-Size Classes
  - Clayey over gypseous-skeletal
  - Clayey over coarse-gypseous
  - Clayey over fine-gypseous<sup>1</sup>
  - Loamy over coarse-gypseous<sup>1</sup>
  - Loamy over fine-gypseous<sup>1</sup>
  - Loamy-skeletal over gypseous-skeletal<sup>1</sup>
- 1 if there is an absolute difference of 15 percent or more gypsum between the two parts of the control section.

# Mineralogy Classes

- Rationale – Current limit for gypsic mineralogy is too high and linking with  $\text{CaCO}_3$  content not needed.
- Revise Gypsic class to allow lower gypsum (15 percent by weight).
- Add new Hypergypsic class for high gypsum soils ( $\geq 40\%$ ).



# Additional Terms for Describing Gypsum Morphology in Soils

- Several terms being added to database:
  - kinds of gypsum concentrations,
  - concentration shape,
  - Ped surface features
  - Fragments in horizons

# Summary

- Terms in lieu of texture
- Substitute Particle-size classes
- Mineralogy Classes
- “Whiter” color book chips
- Descriptive terms for gypsum in pedons